



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/607,510	06/26/2003	John Roberts	WEAT/0393	4809
7590	12/22/2004		EXAMINER	
			BOMAR, THOMAS S	
			ART UNIT	PAPER NUMBER
			3672	
DATE MAILED: 12/22/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/607,510	ROBERTS, JOHN <i>ST</i>
	Examiner Shane Bomar	Art Unit 3672

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 01 November 2004.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-23,26-30 and 32-38 is/are rejected.
- 7) Claim(s) 24,25 and 31 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 26 June 2003 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s)-including the correction-is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|  | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 1, 3-5, 7, 11, 13, 14, 16-18, 21, 26, 28, and 32-38 are rejected under 35 U.S.C. 102(b) as being anticipated by US patent 2,948,059 to Bodine, Jr.

Regarding claims 1, 3, 5, 11, 13, 16, and 18, Bodine discloses an apparatus and method for loosening a threaded connection joining an upper portion and a lower portion of a tubular member, and a back-of tool for use in the tubular member disposed inside a wellbore that comprises: a housing 103; a wireline C for lowering the tool through the tubular member (see Fig. 3); a power supply for delivering signals (see col. 8, lines 1-7); and at least one sonic wave generator 102 mounted within the housing, wherein the sonic wave generator is configured to generate a plurality of sonic, or pressure, waves at a selected frequency (see Figs. 2-3, col. 7, lines 33-37, col. 8, lines 50-56, and col. 9, lines 20-23).

---

Regarding claim 4, a controller is electrically connected to the generator, wherein the controller is configured to vary at least one of amplitude, frequency, and resonance of the pressure wave (see col. 9, lines 44-49).

Regarding claims 7 and 17, the sonic waves are configured to loosen the threaded connection (see col. 1, lines 15-18).

Regarding claims 14 and 21, the method and apparatus further comprises means for applying a reverse torque to the tubular (see col. 9, lines 9-19).

Regarding claim 26, Bodine discloses a method for backing-off an upper portion of a tubular member joined to a lower portion of the tubular by a threaded connection in a wellbore that comprises:

- Applying a reverse torque to the upper portion of the tubular (see col. 9, lines 9-19);
- Lowering a back-off tool through the tubular to a position substantially proximate the threaded connection (see Fig. 2); and
- Generating a plurality of sonic waves through the back-off tool to loosen the threaded connection (see col. 1, lines 15-18).

Regarding claim 28, the method of claim 26 further comprises activating the back-off tool to generate the sonic waves (see col. 8, lines 33-42).

Regarding claims 32 and 35-38, the waves can be constant or variable (see col. 9, lines 20-74).

Regarding claim 33, the method of claim 26 further comprises retrieving the upper portion from the wellbore (see col. 6, lines 37-43).

Regarding claim 34, the method of claim 26 further comprises generating the plurality of sonic waves (see col. 1, lines 15-18) and inherently retrieving the back-off tool since it is well known in the art to retrieve tools after use to avoid junk in the well.

***Claim Rejections - 35 USC § 103***

3. Claims 2, 6, 12, 20, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bodine in view of US patent 4,752,917 to Dechape.

Bodine teaches the method and apparatus for loosening a threaded connection using a sonic wave generator in a wellbore, as applied to claims 1, 5, 11, 18, and 26 above. It is not taught that the sonic wave generator comprises at least one of a piezoelectric ceramic and a stack of piezoelectric plates.

Dechape teaches a sonic wave generator that comprises a piezoelectric ceramic element (see col. 2, lines 44-46). It would have been obvious to one of ordinary skill in the art, having the teachings of Bodine and Dechape before him at the time the invention was made, to modify the method and apparatus taught by Bodine to include the sonic wave generator of Dechape, in order to obtain a sonic wave device that can be used accurately in spite of the effects of the environment (see col. 2, lines 16-24 of Dechape). One would have been motivated to make this combination because Dechape has shown it to be notoriously known in the sonic wave generator art to use a piezoelectric ceramic element as part of the generator.

4. Claims 8-10 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bodine in view of US patent 6,012,521 to Zunkel et al.

Bodine teaches the method and apparatus for loosening a threaded connection using a sonic wave generator in a wellbore, as applied to claims 5 and 16 above. It is not taught that there are two or more wave generators positioned at two or more locations, wherein the two or more generators are positioned so that a combination of the waves is greater than the plurality of

Art Unit: 3672

waves from one generator, or that the two generators are configured to be activated simultaneously or at predefined times.

Zunkel et al teaches a wave generator similar to that of Bodine. It is further taught that there are more than two wave generators, the combined waves from the generators is substantially greater than the waves from one generator, and that the two generators are configured to be activated simultaneously or at predefined times (see col. 11, lines 35-54). It would have been obvious to one of ordinary skill in the art, having the teachings of Bodine and Zunkel et al before him at the time the invention was made, to modify the method and apparatus taught by Bodine to include the two or more wave generators of Zunkel et al. One would have been motivated to make such a combination since Zunkel et al have shown it to be notoriously known in the art that pressure (i.e., sonic) wave generators spaced apart in a work string will have an additive wave field intensity.

5. Claims 15, 22, 23, 29, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bodine in view of US patent 2,305,261 to Kinley.

---

Bodine teaches the method and apparatus for loosening a threaded connection using a sonic wave generator in a wellbore, as applied to claims 11, 16, and 26 above. It is not taught that the method or apparatus further comprises means for setting the tubular to a neutral weight position at the threaded connection above a sticking condition.

Kinley teaches a method and apparatus for loosening a threaded connection similar to that of Bodine. It is further taught that the tubular is set to a neutral weight position at the threaded connection (see page 1, col. 1, lines 51-54 and page 2, col. 1, lines 50-54). It would have been obvious to one of ordinary skill in the art, having the teachings of Bodine and Kinley

Art Unit: 3672

before him at the time the invention was made, to modify the method and apparatus taught by Bodine to include the means for setting the tubular to a neutral weight position of Kinley. One would have been motivated to make such a combination in order to relieve the threaded connection of the weight of the string, as taught by Kinley.

Regarding claims 23 and 30; the combination applied to claims 22 and 29 above can also be applied to these claims because the neutral weight position would inherently be moved up or down the tubular member in accordance with the position of the stuck condition.

#### *Allowable Subject Matter*

6. Claims 24, 25, and 31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### *Response to Arguments*

7. Applicant's arguments with respect to claims 1, 3, 5, 11, 16, and 26 have been considered but are moot in view of the new ground(s) of rejection.

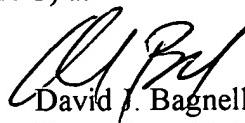
#### *Conclusion*

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shane Bomar whose telephone number is 703-305-4849. The examiner can normally be reached on Monday - Thursday from 7:00am to 4:30pm. The examiner can also be reached on alternate Fridays.

Art Unit: 3672

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bagnell can be reached on 703-308-2151. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
David J. Bagnell  
Supervisory Patent Examiner  
Art Unit 3672

tsb   
December 20, 2004